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09/874,170	06/04/2001	Vasanth Bala	10003355-1	7644

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EXAMINER

PROCTOR, JASON SCOTT

ART UNIT	PAPER NUMBER
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2123

DATE MAILED: 05/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/874,170	Applicant(s) BALA ET AL.	
	Examiner Jason Proctor	Art Unit 2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/4/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claims 1-24 were rejected in non-final office action dated September 23, 2004. Claims 1, 7, 9-10, 14, 16, 18, and 23 have been amended in response dated December 29, 2004. Claims 1-24 have been submitted for reconsideration.

Claims 1-24 have been rejected.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on October 10, 2004 was filed after the mailing date of the first action on the merits on September 23, 2004. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Response to Claim Objections

The Examiner thanks Applicant for amending claims 7 and 16 to correct the formatting informality. Those objections have been withdrawn.

Response to Rejections under 35 U.S.C. § 102

Regarding the rejection of claims 1-3, 6-8, 9-11, 14-19, and 22-24 under 35 U.S.C. § 102(b) as being anticipated by US Patent No. 6,000,028 to Chernoff et al. (Chernoff), Applicant argues primarily that:

Applicant respectfully states that Claims 1, 9, 14, 18, and 23 include the feature "an application code source stored on said server and not on said client." [...] Applicant respectfully disagrees that Chernoff et al. anticipates the feature of Claims 1, 9, 14, 18, and 23.

The Examiner has considered these arguments and finds them persuasive. Chernoff primarily shows a system wherein the server and client are disposed on the same computer system. Chernoff does, however, suggest a network system, but primarily in the context of remote objects, not necessarily remote application code (column 34, lines 33-65). The rejections under 35 U.S.C. § 102 that Chernoff anticipates the claimed invention, as amended, are withdrawn.

An updated search of the prior art has uncovered new references that render the invention of claims 1, 9, 14, 18, and 23 obvious.

Response to Rejections under 35 U.S.C. § 103

Regarding the rejection of claims 4, 12, and 20 under 35 U.S.C. § 103 as being obvious over Chernoff, Applicant primarily argues that these claims depend from an allowable base claim. The status of the base claims has been addressed above.

Regarding the rejection of claims 5, 13, and 21 under 35 U.S.C. § 103 as being obvious over Chernoff and further in view of "Distributed Virtual Machines: A System Architecture of Network Computers" by Sirer, Grimm, Bershad, Gergory, and McDirmid (McDirmid), Applicant primarily argues that these claims depend from an allowable base claim. The status of the base claims has been addressed above.

Outstanding Objections and Rejections

Claim Objections

1. Claim 21 is objected to because of the following informalities: The December 29, 2004 amendment appears to have entered a typographical error "a native execution format **32** required" in claim 21. This claim is listed as original. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over US Patent No. 6,370,687 to Shimura (supplied by Applicant).

3. Regarding claim 1, Shimura teaches a network computer system (column 2, lines 16-30) that comprises:

a server (Fig. 1, reference 10) coupled to the network (Fig. 1, reference 16),
an application code source (Web server from which programs are retrieved, column 4, lines 27-35; Fig. 1, reference 20),
a server code manager coupled to the application code source (substitute compile server, column 4, lines 35-42; Fig. 1, reference 10) and

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a client which does not have application code and is coupled to the network (column 4, lines 27-35).

It would be obvious to a person of ordinary skill in the art at the time of Applicants' invention, in combination with his own knowledge of the particular art, that these clients should have a CPU for executing native code. Official notice is taken that it is well known in the art to provide a CPU with a code cache.

Shimura teaches that the method used by this system comprises:

a client requesting the client application from the substitute compile server (column 4, lines 35-42),

the server code manager (substitute compile server) requests the program from the application code source (Web server) (column 4, lines 35-42),

the server code manager compiles the program into a form usable by the client (column 4, 42-48),

transmitting the program to the client for native execution (column 4, lines 42-48),
and

requesting further code from the server code manager as necessary (column 8, lines 6-18).

Shimura's teaching regarding class files (column 7, line 42 – column 8, line 18) would be obvious to a person of ordinary skill in the art at the time of Applicants' invention as functionally equivalent to "code segments". Additionally, Shimura explicitly teaches the suitability of this method to compiling on a class-by-class basis, or

performing translation and optimization on a method-by-method basis (column 9, line 63 – column 10, line 9).

The claimed feature of storing the application code on the server code manager, contrasted with Shimura's teaching of the application code source (Web server) as external to the server code manager (substitute compile server) is regarded as an obvious rearrangement of parts and therefore not a patentable distinction over the prior art. Additionally, Shimura teaches an alternative scenario wherein the code is stored on the server (column 6, lines 2-7).

The system and method taught by Shimura therefore renders obvious the system of claim 1.

4. Regarding claim 2, Shimura teaches an application code transformation manager for transforming the client application from a first format to a native binary format compatible with a native instruction set of the CPU of the client (substitute compile server and compile controller, column 5, lines 45-61). Shimura teaches a code segment manager for partitioning an application program into segments for transmitting to the client via the network (column 7, line 57 – column 8, line 18).

5. Regarding claim 3, Shimura teaches that the first format is other than the native execution format of the CPU of the client (column 5, lines 15-26). A compiler is functionally equivalent to a "transformation engine to transform the client application from the first format to the native binary format of the CPU of the client".

6. Regarding claim 4, Shimura does not explicitly teach that the first format is a source code text format of a programming language and the transformation manager

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comprises a compiler that compiles and links the client application into a native binary format of the CPU of the client. However, Shimura does explicitly teach that the first format is a "Java program in the form of the virtual machine computer program prepared as an applet on the web page" (column 4, lines 28-30) which is compiled using a Java™ compiler (column 4, lines 42-51 and throughout). It would have been obvious to a person of ordinary skill in the art that the term "Java applet" commonly refers to source code in a text format intended for use in a web page and that source code in a text format is well known input to a typical compiler. It therefore would have been obvious to a person of ordinary skill in the art to implement Shimura's system where the first format is a source code text format of a programming language and compiling that source code into a native binary format of the CPU of the client.

7. Regarding claim 5, Shimura teaches that the transformation manager comprises a just-in-time compiler (column 5, lines 8-15).

8. Regarding claim 6, Shimura's teaching regarding class files (column 7, line 42 – column 8, line 18) would be obvious to a person of ordinary skill in the art at the time of Applicants' invention as functionally equivalent to "code segments". It would be obvious to a person of ordinary skill in the art at the time of Applicants' invention to implement this functionality with a client code manager that requests needed segments from the server and to branch into the received code segment. Indeed, this is the functionality implied by Shimura (column 7, line 57 – column 8, line 13) although the obvious details of implementation are omitted.

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9. Regarding claim 7, Shimura does not explicitly recite the steps of adjusting branch instructions to link into and out of received code segments as recited. Shimura implies this functionality (column 7, line 42 – column 8, line 18; column 9, line 63 – column 10, line 9). Official notice is taken that the need to link code that is compiled in sections is well known. It would have been obvious to a person of ordinary skill in the art at the time of Applicants' invention, in combination with his own knowledge of the particular art, to adequately support linking sections of compiled code by adjusting the branch instructions. Failure to do so would create an inoperable system, as would be recognized as well known by a person of ordinary skill in the art.

10. Claim 8 recites what is generally known in the art as "garbage collection". Official notice is taken that Java™ and the Java™ virtual machine support garbage collection. It would have been obvious to a person of ordinary skill in the art at the time of Applicants' invention, in combination with his own knowledge of the particular art, to implement the system taught by Shimura using garbage collection because of the well-known advantages of garbage collection, such as ease of programming and recovery unused memory.

11. Claims 9-13 recite the server portion of the system of claims 1-5 and are rejected for the same reasons given above for claims 1-5.

12. Claims 14-17 recite the client portion of the system of claims 1 and 6-8 and are rejected for the same reasons given above for claims 1 and 6-8.

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13. Claims 18-22 recite the methods performed by the system of claims 1-7 and are rejected for the same reasons given above for claims 1-7.

14. Claims 23-24 recite a computer program product and system according to claims 1-7 and are rejected for the same reasons given above for claim 1.

Conclusion

15. Applicant's amendment and submission of an information disclosure statement under 37 CFR 1.97(c) with the statement under 37 CFR 1.97(e) on October 4, 2004 necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art considered pertinent by the examiner but not applied has been cited on form PTO-892.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Proctor whose telephone number is (571) 272-3713. The examiner can normally be reached on 8:30 am-4:30 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin J Teska can be reached on (571) 272-3716. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-3713.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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